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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,977	01/15/2002	Yoshiyuki Sasaki	020030	2765

23850 7590 03/24/2004

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP  
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WASHINGTON, DC 20006

EXAMINER
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WILLS, MONIQUE M

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

514

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/044,977	SASAKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Wills M Monique	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 January 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## DETAILED ACTION

### *Priority*

Japanese foreign priority document(s) 2001-009131, filed January 17, 2001 and submitted under 35 U.S.C. 119(a)-(d), has/have been received and placed of record in the file.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagaura U.S. Patent 5,935,731, in view of Opprecht et al., U.S. Patent 4,495,397.

Nagaura teaches a cylindrical battery comprising an aluminum casing (col. 2, lines 40-50). With respect to claims 1, 4, 5 & 6, Nagaura teaches a conductive connecting tab (7) mounted on a battery element (1) and connected to an inner wall surface of a battery case (Fig. 1). With respect to claim 2, the conductive connecting tab is an aluminum extension of the cathode current collector (col. 3, lines 60-65 & col. 4, lines 3-8). In re claim 3, the battery housing is made of aluminum (col. 3, lines 10-15).

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Nagaura is silent to: forming a plurality of bumps for projection welding on the conductive connector tab; positioning said bumps face-to-face to inner wall surface of the case; and supplying welding current under the condition that part of electrodes are pressed on welding points, wherein the electrodes have contact areas larger than portions where the bumps are positioned (embracing claims 1,4, 5 & 6). The process is hereinafter referred to as "the welding method".

Opprecht teaches a method of projection welding thin walled aluminum materials (abstract). With respect to claims 1,4, 5 & 6, the method comprises: providing a plurality of bumps (11,12); (Fig. 4; col. 2, lines 24-30); welding the bumps by applying welding current (col. 5, lines 1-5) with a pair of electrodes pressed on welding points (Figs. 3-4); employing electrodes having contact areas larger than the portions where the plurality of bumps are positioned (col. 5, lines 44-50, & Figs. 3-4). Construction of the projections together with the welding conditions enable: simultaneous welding of a plurality of projections without current shunts; reduction of uneconomically high welding current; and proper position of the weld connection due to prior formed projections (col. 5, lines 65-68 & col. 6, lines 1-15).

Nagaura and Opprecht are analogous art because they are from the same problem solving area, namely, improving welding conditions of aluminum materials.

Therefore, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made, because even though Nagaura does not teach welding the current collector tab to an inner wall of

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the battery case by providing a plurality of bumps on the connection tab and bonding with "the welding method", Opprecht teaches that it is conventional to employ bumps on the welding surfaces of aluminum material and bonding with "the welding method" in order to enable: simultaneous welding of a plurality of projections without current shunts; reduction of uneconomically high welding current; and proper position of the weld connection due to prior formed projections.

### *Conclusions*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (571) 272-1309. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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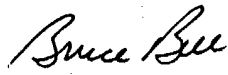
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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mw

03/16/04

  
BRUCE F. BELL  
PRIMARY EXAMINER  
GROUP 1746